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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/628,472

07/29/2003

Osamu Mitomi

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12/17/2004

OLIFF & BERRIDGE, PLC  
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EXAMINER

RAHLL, JERRY T

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/628,472

Applicant(s)

MITOMI ET AL.

Examiner

Jerry T Rahll

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2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,9,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 1-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings submitted on 29 July 2003 have been reviewed and determined to facilitate understanding of the invention. The drawings are accepted as submitted.

### ***Information Disclosure Statement***

2. The information disclosure statements (IDS) submitted on 10 October 2003 and 5 October 2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

### ***Claim Objections***

3. Claims 1-12 are objected to because of the following informalities: In claim 1, the phrase, "... an electrooptic material and one and the other main faces..." is not clear. For examination purposes, the claim will be considered to read, "... an electrooptic material having a main face and one other main face..." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-5, 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,991,491 to Madabhushi.
6. Madabhushi describes an traveling waveguide type optical modulator (see Col 6, Lines 50-55) having a substrate (101) with a main body made of electrooptic material having two main

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faces and a supporting body (107), where an optical waveguide (100) and an electrode (103, 104) are formed on the main face of the main body, where the supporting body is joined to the main body on the side of the other main face, the electrode having a feedthrough portion and a low dielectric portion (105), joining the supporting body and the other main face of the main body, is provided under the feedthrough portion and between the other main face and the supporting body (see Figures 1A-1B and 14-15 and Columns 1-2, 5-6 and 11-12).

7. Further, Madabhushi describes a part of the other main face under the optical waveguide facing a space (106).

8. Further, Madabhushi describes the joining layer having a thickness larger than 5 micrometer (see Column 11, Lines 60-65).

9. Further, Madabhushi describes a recess (106) formed on the side of the other main face of the main body.

10. Further, Madabhushi describes the electrode applying a voltage for modulating light propagating through the waveguide (see Column 6, Lines 1-10)

11. Claims 2 and 11 are rejected under 35 U.S.C. 102(b) as being inherently anticipated by Madabhushi.

12. While Madabhushi does not specifically describe a the dielectric constant of the low dielectric portion as lower than that of the electrooptic material, Madabhushi does describe the low dielectric portion made of glass and the electrooptic material as  $\text{LiNbO}_3$  (Column 2, Lines 25-35). The dielectric constant of glass is lower than that of  $\text{LiNbO}_3$ . Therefore, inherently, the dielectric constant of the low dielectric portion is lower than that of the electrooptic material.

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13. While Madabhushi does not specifically describe a conductive layer on the surface of the supporting body, at least under the feedthrough portion, Madabhushi does describe the supporting body as a metal substrate. A metal substrate is a conductive layer. Therefore, Madabhushi describes a conductive layer on the surface of the supporting body under the feedthrough portion.

***Allowable Subject Matter***

14. Claims 6-8 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claims 6-8 describe the low dielectric portion comprising a resin sheet between the supporting body and the other main face of the main body.

16. Claim 10 describes the main body comprising a first thinner portion facing the recess and a second thinner portion facing the recess and having a thickness smaller than the first thinner portion, where the optical waveguide is provided in the first thinner portion.

17. This is subject matter not described or reasonably suggested in the prior art of record.

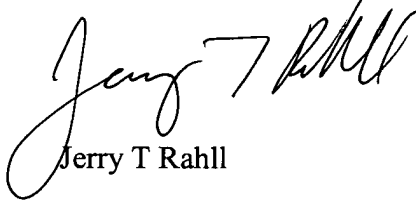
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T Rahll whose telephone number is (571) 272-2356. The examiner can normally be reached on M-F (8:00-5:30), with alternate Fridays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jerry T Rahll



AKM ENAYET ULLAH  
PRIMARY EXAMINER